

# THEPUBLIC'S HEALTH

Newsletter for Medical Professionals in Los Angeles County

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# Pertussis Cases Increase in Los Angeles County

There has been a marked increase in pertussis activity in Los Angeles County. The number of suspect pertussis cases reported and still under investigation from January 1 – March 31, 2005 (n=97) is 3.5-fold the number of suspect cases reported for the same time period in 2004 (n=28).

Pertussis incidence normally peaks every 3 to 5 years. Between 1990 and 2000, there was an annual average of 101 cases reported. Pertussis last peaked in the county in 2002 when 172 pertussis cases were reported. There were 129 cases reported in 2003. In 2004, 155 cases were reported, which is a 20% increase from the previous year.

An increased number of pertussis cases has also been reported nationally as well as statewide. The Centers for Disease Control &

Prevention (CDC) received 18,957 case reports nationwide in 2004 in comparison with 11,647 in 2003. In California, the number of reported cases increased from 706 cases in 2001, to 1,255 cases in 2003 and approximately 1,235 cases in 2004. Local health departments within California are also reporting increases in the number of cases reported between January and March 2005.

Greater media and general public awareness of vaccinepreventable diseases has increased reporting of the disease. We remind all healthcare providers to increase their vigilance for this disease and to order the appropriate laboratory tests. Please see the fact sheet about pertussis included in this issue of the newsletter; it is also available at:

http://www.lapublichealth.org/ip/vpds/pertussis.pdf.

## West Nile Virus: Now Endemic to Southern California

Last year's West Nile virus (WNV) season met experts' predictions as California, especially southern California, was

hit hard. California had the most reported human cases of WNV disease infection in the nation (830 cases, includes cases identified through blood donation) and Los

Angeles County reported more cases than any other local health department in the state (308 cases, including blood donors). Many Los Angeles County cases were hospitalized (179 cases, 58%) and there were 13 reported deaths. Illness was most pronounced among older county residents; the median age of reported cases was 54 years. The peak period of illness onset was late July.

Also last year, the majority of cases were reported from the San Gabriel Valley region (113 cases). In contrast, no cases were reported from the Antelope Valley. This will likely change in 2005 as the virus is expected to migrate towards the northern and western regions of our county.

While it is still too early to predict the severity of the upcoming 2005 season, one thing is certain: additional cases are imminent. The heavy rain, followed by warm weather, provides the ideal breeding environment for mosquitoes—the key vector in WNV disease transmission. Standard environmental surveillance efforts (e.g., bird and mosquito surveillance) have demonstrated WNV is now endemic to our region.

It is not too early to prepare. It is critical that healthcare providers know proper diagnostic and testing procedures, understand the importance of prompt reporting, and educate patients to protect themselves against infection—especially those at high risk for complications from illness (e.g., the elderly and the immunocompromised).

For more information about WNV visit: www.lapublichealth.org/acd/VectorWestNile.htm

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### THE PUBLIC'S HEALTH



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# ANTIBIOTIC RESISTANCE INFORMATION CORNER

# Combat resistance and promote appropriate antibiotic use in your practice! Help keep these drugs working!

Widespread overuse of antibiotics jeopardizes the usefulness of these essential drugs by contributing to the spread of antibiotic resistance. Decreasing inappropriate antibiotic use is the best way to control resistance. The Antibiotic Resistance Information Corner (ARIC) provides important news and information to the medical community to promote appropriate use of antibiotics among providers and patients. Special interest topics include updates in clinical practice guidelines, recommendations in antibiotic treatment, prescribing/resistance trends, and educational interventions. For past issues of ARIC and more resources on antibiotic resistance, visit online at: www.lapublichealth.org/acd/antibio.htm

# Guidelines for the Management of Adults with Hospital-Acquired, Ventilator-Associated, and Healthcare-Associated Pneumonia

American Thoracic Society; Infectious Diseases Society of America. Am J Respir Crit Care Med 2005; 171(4):388-416.

Available at: www.thoracic.org/adobe/statements/guide1-29.pdf

The American Thoracic Society (ATS) and the Infectious Diseases Society of America (IDSA) have issued new evidence-based guidelines for the management of adults with hospital-acquired, ventilator-associated, and healthcare-associated pneumonia. The guidelines include new recommendations for initiating, streamlining, and stopping antibiotic therapy based on microbiologic cultures and the patient's clinical response to therapy, as well as new dosing and duration recommendations.

The focus is on preventing infection and avoiding development of multidrug-resistant pathogens, including Pseudomonas aeruginosa, Acinetobacter species, and methicillin-resistant Staphylococcus aureus.

# Antimicrobial Prophylaxis for Surgery: An Advisory Statement from the National Surgical Infection Prevention Project

Bratzler DW, Houck PM. Clin Infect Dis 2004; 38:1706-1715.

Available at: www.journals.uchicago.edu/CID/journal/issues/v38n12/33257/brief/33257.abstract.html

Appropriate selection and timing of administering prophylactic antimicrobials is critical to reduce emergence of bacterial resistant strains in addition to minimizing harm to the health and safety of the patient. In the efforts to decrease morbidity and mortality associated with postoperative surgical site infections, many guidelines have been developed for prophylactic antimicrobials. Authors from the Surgical Infection Prevention Guidelines Writers Workgroup (SIPGWW) provide a review of these guidelines with discussion of areas of agreement, inconsistencies and unaddressed issues of the guidelines. Consensus advice from experts of the SIPGWW includes the recommendations that infusion of the first antimicrobial dose to begin within one hour before surgical incision and that prophylactic antimicrobials should be discontinued within 24 hours after the end of surgery. Physicians should be aware of the latter for patients who have undergone surgery. Unnecessary prolonged use of prophylactic antimicrobials is associated with the emergence of bacterial-resistant strains. As antimicrobial prophylaxis guidelines become outdated and antimicrobial susceptibility patterns change over time, physicians need to continue to evaluate current literature and examine susceptibility patterns in their own institutions.

#### Clinical practice guidelines and other resources are available online at:

- Infectious Diseases Society of America (IDSA) www.idsociety.org
- IDSA Clinical Practice Guidelines www.journals.uchicago.edu/IDSA/guidelines
- California Medical Association Foundation (CMA) www.aware.md/resource/index.asp
- CMA Clinical Practice Guidelines Compendium (Pediatric and Adult) www.aware.md/clinical/clinical guide.asp
- $\bullet \ \mathsf{CDC} \mathsf{www.cdc.gov/drugresistance/community} \\$
- Acute Communicable Disease Control Program www.lapublichealth.org/acd/antibio.htm

### West Nile Virus.....from page 1

#### Disease reporting: Key to prevention and mandated by state law

This year, DHS is increasing surveillance for WNV activity and will continue to track both West Nile fever and neuroinvasive disease. Recent studies indicate West Nile fever is not as mild as first thought and effects of the infection can linger. Our enhanced WNV human surveillance will allow for the timely identification of disease transmission and the prevention of subsequent cases via information to local mosquito abatement districts. Case information will also guide us to provide targeted health education via the mass media and community organizations to communities at high risk.

Last year, DHS added WNV infection to its list of reportable diseases by authority of the Health Officer under California Code of Regulations, Title 17, Sections 2503 and 2505. Physicians and laboratories are required to report all positive laboratory findings of WNV to the Department of Health Services within one (1) working day. A standard Confidential Morbidity Report (CMR) can be used; the CMR may be faxed to DHS' Morbidity Unit at 1-888-397-3778 or called in during business hours to 1-888-397-3993.

We remind clinicians and infection control professionals that all cases of acute encephalitis and meningitis (including those with viral, bacterial, fungal, or parasitic etiologies) are already reportable under the current California Code of Regulations (Section 2500) to DHS within one (1) working day by phone.

#### DHS laboratory confirmation discontinued

The Los Angeles County Public Health Laboratory remains available for initial specimen testing and confirmation of ambiguous results (see **Diagnostic Testing Guidelines for West Nile Virus**). However, specimens positive for acute WNV infection in commercial labs do not require confirmation by the Public Health Laboratory to meet the WNV case definition since an excellent correlation was found between WNV positive tests in commercial labs and subsequent confirmation in reference Public Health laboratories. We recommend that patients not have WNV screening tests performed unless they have signs or symptoms compatible with WNV fever (i.e., headache, fever, muscle pain rash lasting more than 3 days), aseptic meningitis, encephalitis, or acute flaccid paralysis.

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For full recommendations about mosquito repellents and avoiding mosquito bites, visit: www.cdc.gov/ncidod/dvbid/westnile/mosquitorepellent.htm

# It is not too early to prepare, it is critical that healthcare providers know:

- proper diagnostic and testing procedures,
- understand the importance of prompt reporting, and
- educate patients to protect themselves against infection—especially those at high risk for complications from illness (e.g., the elderly and the immunocompromised).

#### WNV printed information is available in 9 languages

(English, Cambodian, Armenian, Russian, Spanish, Vietnamese, Chinese, Korean, and Farsi). Contact: Acute Communicable Disease Control at 213-240-7941

## Los Angeles County Public Health Laboratory Diagnostic Testing Guidelines for West Nile Virus

- 1. WNV testing is recommended and available on individuals with the following:
  - a. Encephalitis
  - b. Aseptic meningitis (individuals 18 years of age or older)
  - c. Acute Flaccid Paralysis/Atypical Guillain-Barré Syndrome/Transverse Myelitis
  - d. Febrile Illness:
    - Illness must last at least 3 days and be compatible with West Nile fever.
    - A healthcare provider must evaluate the case.
      - Note: West Nile fever syndrome can be variable and often includes headache, fever (≥38°C), and muscle weakness. Other symptoms include rash, swollen lymph nodes, eye pain, nausea or vomiting. After initial symptoms, the patient may experience several days of fatigue and lethargy.
  - e. Aseptic Meningitis (individuals over 18 years of age):
    - Only after a workup for enteroviruses is obtained (e.g., CSF PCR, throat or stool isolation).
- 2. For suspected cases of WNV fever only, an Acute Communicable Disease Control physician or nurse must approve WNV testing (213-240-7941).

### West Nile Virus.....from page 3

#### **INSTRUCTIONS FOR SENDING SPECIMENS:**

#### **REQUIRED**

- Acute Serum: 5-10 ml of blood obtained at least 7 days after symptom onset in red top tube, spun, separated, and refrigerated.
- Cerebral Spinal Fluid: 1-2 cc stored frozen.
- Only if West Nile infection is highly suspected and acute serum is negative, **second serum:** ≥5 ml of blood collected 3-5 days after the acute serum.
- Each specimen should be labeled with date of collection, specimen type, and patient name.
- Specimens should be sent on cold pack using an overnight courier.
- The Los Angeles County Public Health Laboratory requisition form is recommended.

#### Send specimens and lab slips to:

LA County Public Health Laboratory, Serology Section 313 N. Figueroa Street, Room 1227 • Los Angeles, CA 90012 Phone: 213-250-8619 • Facsimile: 213-482-3907

# For questions or complaints about mosquitoes...

DHS monitors and addresses human health problems, but is not directly involved with mosquito control activities. This responsibility is handled by the county's five independent mosquito control (abatement) districts. For questions about mosquito control in cities and jurisdictions, contact their respective health departments.

#### Los Angeles County Mosquito Abatement Districts:

- Antelope Valley Mosquito and Vector Control District (661) 942-2917
- Compton Creek Mosquito Abatement District (310) 639-7375
- Greater Los Angeles County Vector Control District (562) 944-9656
- Los Angeles County West Vector Control District (310) 915-7370
- San Gabriel Valley Mosquito and Vector Control District (626) 814-9466

#### **Neighboring Health Departments:**

<ul> <li>City of Long Beach</li> </ul>	(562) 570-4132
• City of Pasadena	(626) 744-6012
Orange County	(714) 834-8180
• Ventura County	(805) 981-5101
• Riverside County	(951) 358-5107
San Bernardino County	(909) 387-6280

### **Reporting Dead Birds Still Needed**

Since sick or dead birds are an excellent indicator of the local presence of WNV, reports are needed to guide infection control and surveillance efforts. Although not all birds will be collected, phone reports are important.

Report all dead birds to:

**Los Angeles County Veterinary Public Health** 1-877-747-2243

or

California Department of Health Services 1-877-WNV-BIRD

NOTE: Routine contact with birds (alive or dead) or other animals cannot transmit West Nile virus to humans. Dead birds can be safely disposed of by using gloves or a plastic bag to put the carcass in the garbage.

### **Using DEET**

Since no vaccine presently exists, preventing exposure to mosquito bites is essential to avoiding WNV infection. While many products claim to prevent mosquito bites, the CDC notes the most effective repellents contain DEET (N,N-diethyl-m-toluamide) or permethrin. Some non-DEET repellent products that are applied directly to skin may also provide limited protection from mosquito bites. However, because studies suggest that these non -DEET products do not offer the same level of protection, or last as long as those with DEET, DEET or permethrin products should be used if possible.

### PERTUSSIS FACT SHEET

#### LOS ANGELES COUNTY IMMUNIZATION PROGRAM

Revised 04/2005, Page 1 of 2

#### **BACKGROUND INFORMATION**

- Agent: Bordetella pertussis, a gram negative pleomorphic bacillus.
- Transmission: Via contact with respiratory tract secretions or droplets of infected persons.
- Incubation Period: Commonly 7-10 days (range 4-21 days).
- **Communicability:** Greater in the catarrhal stage before paroxysms. Tapers off until 21 days after onset of paroxysms, if untreated. If treated, 5 days after start of appropriate antibiotics. Secondary attack rate of 70 100% among susceptible household contacts.

#### **IMMUNITY FROM VACCINATION**

- 5 doses of DTaP are recommended for children <7 years of age</li>
  - o 3 (primary) doses at ages 2, 4, and 6 months
  - o Boosters at 15-18 months AND 4-6 years of age
- Vaccine protection is known to decrease over time, with little or no protection 5-10 years following receipt of the last vaccine dose.

#### **CLINICAL FEATURES OF PERTUSSIS**

- 1<sup>st</sup> Stage (Catarrhal stage): Insidious onset of coryza (runny nose) and a mild, occasional cough, similar to the common cold.
- **2<sup>nd</sup> Stage (Paroxysmal stage):** Cough becomes more severe. Repeated violent coughing episodes without inhalation (paroxysms), ended by characteristic high-pitched inspiratory whoop. Post-tussive vomiting or gagging can occur without whoop. Can last 1-2 months.
- 3<sup>rd</sup> stage (Convalescent stage): Gradual recovery. Cough becomes less paroxysmal.
- Infants (under 6 months of age): May have cough, choking, apnea, cyanosis, without "whoop" or paroxysms. Leukocytosis and lymphocytosis are common findings during the early paroxysmal stage. Complications include hospitalization, pneumonia, seizures, encephalopathy, and death.
- Adults/adolescents/immunized children: Have milder illness, hacking cough, usually with mucus production and occasional paroxysms. Post-tussive vomiting or gagging can occur without "whoop". Mimics bronchitis.

#### ASSAYS ACCEPTED AS LABORATORY CONFIRMATION OF PERTUSSIS

• Culture: A negative culture does not rule out the diagnosis. All suspected cases of pertussis should have a nasopharyngeal aspirate or swab obtained for culture from the posterior nasopharynx before starting antibiotics and within 3 weeks of the cough onset. Additionally, plating the specimen immediately onto culture media, as opposed to using transport media, results in a higher percentage of positive results. Bordet-Gengou or Regan-Lowe agar are the only media which can be used for culturing Bordetella pertussis. It is therefore important to check with the laboratory beforehand, to determine the availability of the correct culture media. Consult the Public Health Lab or the Immunization Program if technical assistance is needed.

# PERTUSSIS FACT SHEET

#### LOS ANGELES COUNTY IMMUNIZATION PROGRAM

Revised 04/2005, Page 2 of 2

PCR Tests: The PCR test, when it is available, can greatly aid in the diagnosis of pertussis.
 Numerous studies have demonstrated the potential for PCR tests to detect Bordetella pertussis with greater sensitivity and more rapidly than culture. Positive PCR must also be accompanied by positive clinical signs and symptoms. A specimen obtained by nasopharyngeal swab or aspirate is adequate for the PCR test.

#### ASSAYS NOT ACCEPTED AS LABORATORY CONFIRMATION OF PERTUSSIS

- Direct Fluorescent Antibody (DFA) Tests: The DFA test has variable sensitivity and specificity, resulting in false negative as well as false positive results.
- Serological Tests: Serological tests are not yet standardized enough to be highly reliable and are difficult to interpret for previously immunized individuals.

#### TREATMENT AND CHEMOPROPHYLAXIS

All cases, their household members, and other close contacts, regardless of age and immunization status, should receive treatment or chemoprophylaxis. The goal is to reduce spread of infection within the household and the community at large. The dosing for treatment or chemoprophylaxis is the same.

#### RECOMMENDED TREATMENT AND CHEMOPROPHYLAXIS\*

Drug	Infants and Children	Adults						
Erythromycin	40-50 mg/kg/day in 4 divided doses	1 to 2 g/day in 4 divided doses						
	x 14 days (max 2 g/day)	x 14 days						
If person can not tolerate erythromycin or compliance is questionable:								
	TMP-8 mg/kg/day and SMX-40 mg/kg/day	2 regular strength tablets (TMP-80 mg						
Sulfamethoxazole	in 2 divided doses x 14 days	and SMX-400 mg) BID or one double						
(TMP-SMX)		strength tablet (TMP-160 mg and						
		SMX-800 mg) BID x 14 days						
Clarithromycin	15-20 mg/kg/day (max 1g/day)	15-20 mg/kg/day (max 1g/day)						
	in 2 divided doses x 7days	in 2 divided doses x 7days						
Azithromycin	10-12 mg/kg/day as one daily dose	500 mg in one dose on day 1 and						
	(max 500 mg/day) x 5 days	250 mg once a day on days 2-5						

<sup>\*</sup>Initiating treatment  $\geq 3$  weeks after cough onset has limited benefit to patient or contacts and initiating chemoprophylaxis  $\geq 3$  weeks after exposure has limited benefit for the contact.

#### REPORTING TO PUBLIC HEALTH

Under the California Code of Regulations, Title 17, Section 2500, all cases or suspected cases of pertussis are to be reported to the local health department within one working day of identification of the case or suspected case. Do not wait for culture confirmation before reporting a suspected case of pertussis. For Los Angeles County residents, report to the Morbidity Central Reporting Unit by calling 888-397-3993 or faxing a Confidential Morbidity Report (CMR) form to 888-397-3778. The CMR forms can be obtained by calling 213-240-7821 or downloaded from the website: <a href="http://www.lapublichealth.org/acd/reports/Reporting%20Forms/CMR.pdf">http://www.lapublichealth.org/acd/reports/Reporting%20Forms/CMR.pdf</a>.

### Latest Studies on Lead Levels and Their Harm to Children

Since the lowering of the Centers for Disease Control and Prevention's blood lead levels of concern to 10  $\mu g$  per deciliter in 1991, new studies have been calling for a more careful consideration of the harm to children of lead levels even below 10  $\mu g$ .

In a study published in 2004<sup>2</sup>, Bellinger warns the medical community about the risk that the current Centers for Disease Control and Prevention (CDC) screening guideline of 10 µg per deciliter represents as a management tool, and warns that it should not be interpreted as a threshold for toxicity. Bellinger points out the fact that no threshold has been identified and that recent data are consistent with effects well below 10 mg/dl.

Bellinger supports his data on key developmental issues. Among them, the fact that lead exposure differs in terms of the maturity of the organs affected, the presumed mechanisms of toxicity, and the forms in which toxicities are expressed. On the other hand, the average fractional gastrointestinal absorption of lead is much greater in infants and young children than in adults, and the fact that absorption is increased in the presence of nutritional deficiencies that are more common in children than in adults (calcium, iron).

Worth special mention in Bellinger's report is the observation that peripheral neuropathies are more prominent in adults, whereas in the developing nervous system central effects are more prominent than peripheral effects. Even more, while the peripheral nervous system effects in adults tend to reverse after cessation of exposure, the central effects in children do not appear to reverse. Bellinger hypothesizes that this may be due to the interference of lead with the complex processes by which synaptic connections are selected and modified.

Another important observation from Bellinger is the reminder that under many exposure scenarios, the half-life of lead in blood is greater in children than in adults, and that children with the same blood lead level should not be considered to be at equivalent developmental risk, based on data suggesting that children vary also in their responses to lower levels of exposure. Co-exposure to other toxicants is a candidate explanation for individual differences in susceptibility, although greater attention has been paid to the potential of co-exposures to be cofounders than to be effect modifiers. In this regard, lead seems to be similar to other

These authors concluded that, according to their research, more U.S. children may be adversely affected by environmental lead than previously estimated.

biological risks, such as low birth weight, in that children from environments that offer fewer developmental resources and supports express deficits at a lower blood lead level than do children from more optimal environments and show less recovery after exposure.

Most important of all in Bellinger's report is the fact that until now it has not been identified a threshold value below which lead has no apparent adverse developmental effect. This makes the CDC's statement setting 10  $\mu g/dL$  as the screening action guideline, a risky one, as it is often interpreted as a threshold, leading to view a level of <10  $\mu g/dL$  as "safe", and a higher level as "toxic". In Bellinger's view, no single number can be cited as a threshold. Moreover, within the past decade, several studies have suggested that even "subclinical" lead exposure is a risk factor for antisocial, delinquent behaviors.

Bellinger's observations are in line with what Canfield et al. reported in 20032: Blood lead concentrations, even those below 10  $\mu g$  per deciliter, are inversely associated with children's IQ scores at three and five years of age, and associated declines in IQ are greater at these concentrations than at higher concentrations. These authors concluded that, according to their research, more U.S. children may be adversely affected by environmental lead than previously estimated.

#### References

- 1. Bellinger, David C., Lead, Pediatrics Vol. 113 No. 4, April 2004.
- Canfield, Richard L.; Henderson, Charles R.; Cory-Slechta, Deborah A.; Cox, Christopher; Jusko, Todd A.; Lanphear, Bruce P., Intellectual Impairment in Children with Blood Lead Concentrations below 10 \_g per Deciliter, N. Engl. J. Med. 348;16, www.nejm.org, April 17, 2003.

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Disease	THIS PERIOD Dec. 2004	SAME PERIOD LAST YEAR Dec. 2003	YEAR to date Nov.		YEAR END TOTALS		
			2004	2003	2003	2002	2001
AIDS*	120	175	2,335	2,532	2,532	1,719	1,354
Amebiasis	9	11	98	121	121	102	139
Campylobacteriosis	53	92	915	1,100	1,100	1,067	1,141
Chlamydial Infections	2,937	2,736	38,104	36,530	36,530	35,688	32,670
Encephalitis	10	2	137	38	38	61	41
Gonorrhea	782	686	9,531	7,983	7,983	7,800	7,743
Hepatitis Type A	22	31	319	374	374	438	542
Hepatitis Type B, Acute	8	7	71	73	73	29	44
Hepatitis Type C, Acute	0	0	5	0	0	3	1
Measles	0	0	1	0	0	0	8
Meningitis, viral/aseptic	40	83	790	899	899	466	530
Meningococcal Infections	0	7	28	32	32	46	58
Mumps	0	1	2	10	10	16	17
Non-gonococcal Urethritis (NGU)	110	105	1,430	1,393	1,393	1,393	1,429
Pertussis	39	51	141	130	130	170	103
Rubella	0	0	0	0	0	0	0
Salmonellosis	97	66	1,185	995	995	956	1,006
Shigellosis	32	60	550	669	669	974	684
Syphilis, primary & secondary	42	36	445	451	451	364	188
Syphilis, early latent (<1 yr.)	35	26	392	368	368	353	209
Tuberculosis	143	206	392	949	949	1,021	1,046
Typhoid fever, Acute	0	1	13	16	16	33	17

<sup>\*</sup> Case totals are provisional and may vary following periodic updates of the database.